

REMARKS

I. Status of Claims

Claims 1, 4-7, 10, 15, 19, 21, 24, and 28 are pending in this application. Claims 2, 3, 9, 11-13, 16-18, 20, 22, and 23 were previously canceled and claims 8, 14, 25-27, and 29-40 are canceled herewith. Claims 1 and 10 are independent. Claims 1, 7, 10, 15, and 19 are currently amended.

Claims 1, 4 – 8, 10, 15, and 24 – 32 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,651,433 (“George”) in view of U.S. Patent No. 6,579,080 (“Spinnler”).

Also, claims 14, 33 – 37 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over George in view of Spinnler and further in view of U.S. Patent No. 4,008,573 (“Petrillo”) and U.S. Patent No. 6,196,817 (“Tsumagari”).

In addition, claims 19 and 21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over George in view of Spinnler and further in view of U.S. Patent No. 7,076,963 (“Higashiyama”).

The Examiner has also rejected claim 39 as allegedly failing to comply with 35 U.S.C. § 112, second paragraph, as claim 39 depends from a non-existent claim (i.e., claim 42).

The Applicants respectfully request reconsideration of these rejections in view of the foregoing amendments and the following remarks.

II. Specification

The Applicant respectfully submits the specification is amended to correct a minor typographical error.

III. 35 U.S.C. § 112, second paragraph, Rejection

The Applicant respectfully submits that since claim 39 is canceled, this rejection is moot and should therefore be withdrawn.

IV. Pending Claims

Without waiving any argument and to facilitate prosecution, independent claim 1 is amended to include the limitations of claims 33 and 34 (claims 33 and 34 are now canceled), while independent claim 10 is amended to include the limitations of claim 14 (claim 14 is now canceled). Accordingly, independent claims 1 and 10 would appear to stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over George in view of Spinnler, and further in view of Petrillo and Tsumagari (i.e., claims 33, 34, and 14 were rejected using this combination of references).

The Applicant respectfully submits that claim 1 is patentable over the cited references at least because it recites, *inter alia*, “...wherein the orbital partitioning wall and the compressor case are made of high-heat conductive material, and the expander case is made of a heat-resistant material...” and “...wherein an aluminum alloy is used as the high heat-conductive material, and an iron alloy is used as the heat-resistant material.”

The Applicant respectfully submits that claim 10 is patentable over the cited references at least because it recites, *inter alia*, “...wherein the orbital partitioning wall and the compressor case are made of a high heat-conductive material, and the expander case is made of a heat-resistant material...” and “...wherein an aluminum alloy is used as the high heat-conductive material, and an iron alloy is used as the heat-resistant material.”

With respect to claims 1 and 10, the Applicant respectfully submits that these claims both recite that “the orbital partitioning wall and the compressor case are made of high-heat conductive material, and the expander case is made of a heat-resistant material.”

On page 3 of the Office Action, it is recognized that George and Spinnler do not teach or suggest these limitations. In order to address at least this deficiency, the Office cites Petrillo and Tsumagari. More specifically, the Office Action alleges on pages 3-4 that, “Petrillo discloses that it’s well known in the art to use iron expander 26 (note abstract and column 1, lines 58-60). Tsumagari et al teaches it’s well known to have aluminum compressor housing 110 and scroll members 111, 112, (column 2, lines 56-61).” Further, the Office Action alleges that “[i]t would have been obvious at the time the invention was made to a person having ordinary skill in the art

to use aluminum to form the compressor casing and scroll member in George, Jr. (added from Spinnler) as taught by Tsumagari et al., and to use iron expander in George, Jr. as taught by Petrillo for the purposes of achieving appropriate heat conducting and resisting at appropriate locations in the system.”

However, the Applicant respectfully submits that, Petrillo merely discloses an expander, and Tsumagari merely discloses a compressor, independently. Thus, neither Petrillo nor Tsumagari disclose or suggest a “orbital partitioning wall made of high-heat conductive material” as required by the inventions of claims 1 and 10. The Applicant respectfully submits that “[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). *See also* MPEP 2143.03.

Further, as discussed in *KSR Int'l Co. v. Teleflex, et al.*, No. 04-1350, (U.S. Apr. 30, 2007), the Applicant respectfully submits that it remains necessary to identify the reason why a person of ordinary skill in the art would have been prompted to modify George and/or Spinnler in the manner as claimed by the Applicant. Obviousness cannot be sustained on mere conclusory statements.

Therefore, the Applicant respectfully submits that claims 1 and 10, as well as their dependent claims, are patentable over the cited references.

Further, the dependent claims further distinguish certain embodiments of the present invention from the cited references. For example, claim 7, following the above-identified amendments, now recites, *inter alia*, “...a heat insulator arranged to cover a wall surface of the expander and to keep the wall surface of the expander warm¹.” Thus, an advantage of certain embodiments of the present invention, for example, as stated on page 35, lines 16 to 25 of the present application, is obtained. Namely, “[t]he heat insulator 201a keeps the wall surface of the expander case 12 warm.” The Applicant respectfully submits that this prevents heat from being released from the expander case 12 outside through heat transfer from the expander case 12 when the working fluid is expanded in the scroll expander 6 in a heat-insulated state.

¹ The Applicant respectfully submits that support for this amendment is at least supported by page 35, lines 1 to 4 of the specification. More specifically, as shown in Fig. 30 of the present application, “a heat insulator 201a is arranged to cover the expander case 12 in the heat insulation apparatus 2 and keeps the expander case 12 warm.”

In this manner, the wall surface of the expander case 12 is kept warm to prevent heat energy from leaking from the scroll expander 6. As a result, the heat energy is converted to kinetic energy more efficiently.

It is respectfully submitted that none of cited references discloses nor suggests the limitations of claim 7. In addition, claim 15, which depends from independent claim 10, is also amended in the same manner as claim 7.

V. **Conclusion**

In view of the foregoing discussion, the Applicant respectfully submits that the present application is in all aspects in allowable condition. Favorable reconsideration and early issuance of a Notice of Allowance are therefore respectfully requested.

The Examiner is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

Dated: March 2, 2009

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